Car Powertrain Technology

Manual transmissions, double-clutch transmissions and automatic transmissions for cars

List of lubricants TE-ML 11

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The list of lubricants TE-ML 11, **edition 01.04.2025** replaces all previous editions. The current list can be requested from any ZF after-sales service center or accessed on the Internet under www.aftermarket.zf.com/lubricants.	**ZF Friedrichshafen AG** D-88038 Friedrichshafen www.zf.com/contact

1. Manual transmissions

Product groups	Approved lubricants for service fills
S5-31 S5-39	According to spare part number of vehicle manufacturer: - Castrol BOT 338 (ZF approval number ZF001053) => BMW Oil No. 2300 7533 513
S6-37	According to spare part number of vehicle manufacturer: - Esso Gear Oil 304 / BMW Oil No. 2300 1434 404 (clutch bell housing label MTF-LT1) no longer available => replaced by Castrol BOT 338 (ZF approval number ZF001053) - Castrol BOT 338 (ZF approval number ZF001053) => BMW Oil No. 2300 7533 513 (clutch bell housing label MTF-LT2) - Castrol BOT 207 (ZF approval number ZF001069) => BMW Oil No. 2300 7533 818 (clutch bell housing label MTF-LT3) **Warning: use of incorrect lubricant can cause transmission failure**
S6-35 S6-45 S6-50	According to spare part number of vehicle manufacturer: - Fuchs Titan FFL-3 (ZF approval number ZF004742) => ZF Oil No. 0671.090.534 (ZF LifeguardFluid 7.3 DCT / ZF Lifeguard eFluid 2), (ZF approval number ZF004795) => BMW Oil No. 8322 2167 666 (MTF-LT-5) => Daimler Oil No. A 002 989 04 03 => JLR Oil No. GX73-M1R564-AA
S6-53	According to spare part number of vehicle manufacturer: - Esso Gear Oil 304 / BMW Oil No. 2300 1434 404 (clutch bell housing label MTF-LT1) no longer available => replaced by Castrol BOT 338 (ZF approval number ZF001053) - Castrol BOT 338 (ZF approval number ZF001053) => BMW Oil No. 2300 7533 513 (clutch bell housing label MTF-LT2) => VW Oil No. N 05279800 - Castrol BOT 207 (ZF approval number ZF001069) => BMW Oil No. 2300 7533 818 (clutch bell housing label MTF-LT3) **Warning: use of incorrect lubricant can cause transmission failure**
6S530	According to spare part number of vehicle manufacturer: - Castrol BOT 338 (ZF approval number ZF001053) => Nissan Oil No. 32001 1BY0A
S7-45HL, S7-45HLA S7-47HL S7-55HL, S7-55HLA	According to spare part number of vehicle manufacturer: - ExxonMobil Mobilube PTX 75W-90 (ZF approval number ZF001808) => ZF Oil No. AA02.914.175 (ZF LifeguardFluid 7.7 DCT), (ZF approval number ZF011885) => Porsche Oil No. 999.917.067.00 or => Porsche Oil No. 999.917.090.00 or - ExxonMobil Mobilube PTX FE 75W-80 (ZF approval number ZF002243) => Porsche Oil No. N 052554 B0
S7-48HL S7-57HL, S7-57HLA	According to spare part number of vehicle manufacturer: - ExxonMobil Mobilube PTX FE 75W-80 (ZF approval number ZF002243) => Porsche Oil No. N 052554 B0

2. Double-clutch transmissions

Product groups	Approved lubricants for service fills
7DT45HL, 7DT45HLA, 7DT45FL 7DT46HL, 7DT46HLA, 7DT46FL 7DT47HL 7DT48HL 7DT49HL 7DT50HL 7DT51HL 7DT55HL, 7DT55HLA, 7DT55FL 7DT70HLA 7DT71HLA 7DT72HLA 7DT78HL	According to spare part number of vehicle manufacturer: 1. Clutch section Fuchs Titan FFL-3 (ZF approval number ZF004742) => ZF Oil No. 0671.090.534 (ZF LifeguardFluid 7.3 DCT / ZF Lifeguard eFluid 2), (ZF approval number ZF004795) => Porsche Oil No. 999.917.080.00 2. Transmission section ExxonMobil Mobilube PTX 75W-90 (ZF approval number ZF001808) => ZF Oil No. AA02.914.175 (ZF LifeguardFluid 7.7 DCT), (ZF approval number ZF011885) => Porsche Oil No. 999.917.067.00 or => Porsche Oil No. 999.917.090.00
7DT71HLA	According to spare part number of vehicle manufacturer: 1. Clutch section => Porsche Oil No. 999.917.080.01 2. Transmission section ExxonMobil Mobilube PTX 75W-90 (ZF approval number ZF001808) => ZF Oil No. AA02.914.175 (ZF LifeguardFluid 7.7 DCT), (ZF approval number ZF011885) => Porsche Oil No. 999.917.067.00 or => Porsche Oil No. 999.917.090.00
7DT75, 7DT75A 7DT76, 7DT76A	According to spare part number of vehicle manufacturer: Fuchs Titan FFL-3 (ZF approval number ZF004742) => ZF Oil No. 0671.090.534 (ZF LifeguardFluid 7.3 DCT / ZF Lifeguard eFluid 2), (ZF approval number ZF004795) => Porsche Oil No. 999.917.080.00
8DT80, 8DT80A, 8DT80APH 8DT90, 8DT90A, 8DT90APH 8DT100, 8DT100A, 8DT100APH	According to spare part number of vehicle manufacturer: - Fuchs Titan FFL-8 (ZF approval number ZF004743) => ZF Oil No. 0671.090.545 (ZF LifeguardFluid 8.2), (ZF approval number ZF005968) => Porsche Oil No. 000.043.210.44 => Bentley Oil No. G 052524 B2
8DT55HL, 8DT55HLA 8DT60HL, 8DT60HLH, 8DT60HLAH 8DT80HLA	According to spare part number of vehicle manufacturer: 1. Clutch section Fuchs Titan FFL-8 (ZF approval number ZF004743) => ZF Oil No. 0671.090.545 (ZF LifeguardFluid 8.2), (ZF approval number ZF005968) => Porsche Oil No. 000.043.210.44 2. Transmission section ExxonMobil Mobilube PTX FE 75W-80 (ZF approval number ZF002243) => Porsche Oil No. N 052554 B0

3. Automatic transmissions

Product groups	Approved lubricants for service fills
3HP22, 3HP22Q, 4HP14Q, 4HP18FL (1), 4HP18FLA (2), 4HP18FLE (1), 4HP18Q, 4HP18QE, 4HP22, 4HP22EH, 4HP22HL (3), 4HP24, 4HP24A (2)	Automatic Transmission Fluid (ATF) according to lubricant classes 11A / 11B => Refer to the following pages for approved commercial products or Automatic Transmission Fluid (ATF) based on mineral base fluids according to former Dexron-II / Dexron-III specification by General Motors. => without listing
5HP18	According to marking: - Transmissions with black type plate Automatic Transmission Fluid (ATF) according to lubricant class 11B => Refer to the following pages for approved commercial products - Transmissions with green type plate or with green label on the oil pan. ZF LifeguardFluid 5 (ZF No. S671 090 170), (ZF approval number ZF001363) => BMW Oil No. 8322 9407807 ATF according to lubricant class 11B are not permitted (exception: ZF LifeguardFluid 5) **Warning: use of incorrect lubricant can cause transmission failure**
5HP30	According to spare part number of vehicle manufacturer: - Shell ATF LA-2634 / BMW Oil No. 8322 9407765 (Marking of filling port of oil pan) no longer available => replaced by ZF LifeguardFluid 5, (ZF approval number ZF001363) - ZF LifeguardFluid 5 (ZF No. S671 090 170), (ZF approval number ZF001363) => BMW Oil No. 8322 9407807 (Marking of filling port of oil pan) => Rolls Royce Oil No. PL 31493PA
4HP20, 5HP19, 5HP19FL (1), 5HP19FLA (2), 5HP19HL (1), 5HP19HLA (2), 5HP24, 5HP24A (2)	According to spare part number of vehicle manufacturer: ZF LifeguardFluid 5 (ZF No. S671 090 170), (ZF approval number ZF001363) => Audi / VW Oil No. G 052162 A1 / A2 / A6 => BMW Oil No. 8322 9407807 => Citroen Oil No. Z 000169756 => Jaguar Oil No. JLM 20238 => Mercedes Benz Oil No. A 0019892203 => Peugeot Oil No. Z 000169756 => Porsche Oil No. 999.917.547.00
6HP19, 6HP19A (2) - MPL-dependent (main parts list) 6HP19X - **not for** Audi Q7, 6HP21, 6HP21X, 6HP26, 6HP26X, 6HP26A61 - **not** for vehicles equipped with Audi W12-engine (2), 6HP28, 6HP28X, 6HP28A61, 6HP32, 6HP32A (2), 6HP32X	According to spare part number of vehicle manufacturer: ZF LifeguardFluid 6 (ZF No. S671 090 255), (ZF approval number ZF001169) => AML Oil No. 4G4319A509/AA/S => Audi / VW Oil No. G 055005 A1 / A2 / A6 => Bentley Oil No. PY112995PA => BMW Oil No. 8322 0142516 => Hyundai Oil No. 040000C90SG => Jaguar Oil No. Jaguar Fluid 8432 => Land Rover Oil No. TYK500050 => Maserati Oil No. 231603
6HP19A (2) - MPL-dependent (main parts list) 6HP19X - for Audi Q7, 6HP26A61 - for vehicles equipped with Audi W12-engine (2) 6HP28AF (2) 8HP45, 8HP45X, 8HP45HIS, 8HP45XHIS 8HP50, 8HP50HIS, 8HP50X, 8HP50XHIS; 8HP51HIS, 8HP51X, 8HP55A (2), 8HP55AHIS (2), 8HP55FL, 8HP55FLHIS, 8P55AH (2), 8P55FLH, 8HP65A (4), 8HP65AX (5), 8HP66APH, 8HP70, 8HP70H, 8P70H, 8P70XH, 8HP70HIS, 8HP70T, 8HP70THIS, 8HP70XHIS, 8HP70L, 8HP70X, 8HP75, 8HP75HIS, 8HP75X, 8HP75XHIS, 8HP76, 8HP76X, 8HP76XHIS, 8HP90, 8HP90A (2), 8HP90AHIS (2), 8HP90A74 (2), 8HP95, 8HP95A (6), 8HP95AX (5), 8HP95X, 8HP95AXPH, 8HP95THIS	According to spare part number of vehicle manufacturer: ZF LifeguardFluid 8 (ZF No. S671 090 312), (ZF approval number ZF000020) => Audi / VW Oil No. G 060162 A1 / A2 / A6 ATF => BMW ATF 3+, Oil No. 83225A12A00 => Jaguar Oil No. 02JDE 26444 => Land Rover Oil No. LR023288 => Chrysler Oil No. 68157995AA => Petronas Tutela Transmission AS8 => Iveco Oil No. 5000 42 124 => Aston Martin Oil No. FD33-19A509-AA => Bentley Oil No. JNV 862 564 D => Porsche Oil No. 000 043 210 54

Product groups (continuation)	Approved lubricants for service fills
8HP65APH, 8HP65AXPH, 8P65FLPH, 8P75PH, 8P75XPH, 9HP48QXR, 9HP48QXO, 9HP48QX, 9HP48Q, 9HP48QL, 9HP50, 9HP50Q, 9HP50QX	According to spare part number of vehicle manufacturer: ZF LifeguardFluid 9 (ZF No. AA01.500.001), (ZF approval number ZF005946) ZF Lifeguard Hybrid 1 (ZF No. AA02.836.455), (ZF approval number ZF008352) => BMW ATF 3+, Oil No. 83225A12A00 => Honda ATF-Type 3.1.: 08263-999-01HE (EU), 08200-9017 (USA) => Jaguar Oil No. 02JDE 26444 (7) => Land Rover Oil No. LR023288 (7) => Mercedes Benz MB 236.82 ATF A 000 989 65 05 => Nissan MATIC-R, Oil No. 999MP-MTR00P => Renault ZT50, Oil No. 77 17 277 174 => Stellantis Oil No. 68218925AB
8HP60MH, 8HP60XMH, 8HP80MH, 8HP80XMH, 8P80PH, 8P80XPH, 8P100XPH	According to spare part number of vehicle manufacturer: ZF Lifeguard Hybrid 2 (ZF No. 0671.090.548), (ZF approval number ZF008240) => BMW ATF 8, Oil No. 83 22 5 A28 F03 => Land Rover Oil No. LR181789

4. Explanation of footnotes and comments

Footnotes

(1) Filling differential with transmission oil Castrol SAF-AG4 => Audi / VW Oil No. N 052145000, Porsche Oil No. 999.917.545.00.

(2) Split oil supply front / rear axle differential:
- Filling front axle differential with transmission oil Castrol SAF-AG4
  => Audi / VW Oil No. N 052145000, Porsche Oil No. 999.917.545.00
- Filling rear axle differential with transmission oil Castrol SAF-AG4 + 4% Sturaco FM 1992 KS
  => Audi / VW Oil No. G 055145 A2

Common oil supply front /rear axle differential:
- Filling with transmission oil Castrol SAF-AG4 + 4% Sturaco FM 1992 KS
  => Audi / VW Oil No. G 055145 A2

(3) Filling differential with transmission oil API GL-5, MIL-L-2105D, MIL-PRF-2105E, SAE J 3260, viscosity class SAE 75W-90 or SAE 90.

(4) 8HP65A Status: April 2017

Application	front-axle differential	rear-axle center differential
Q5 B9 (A4/A5) TDI 260kW C8 (A6/A7) TDI D5 (A8) R4 + V6 Q8 R4 + V6 TDI Touareg R4 + V6 TDI	Castrol BOT851L, (ZF approval number ZF002036) Audi / VW / Porsche Oil No. N.052.190.D0, G.065.190.A2	Castrol SAF-AG4 + 4% Sturaco FM1992 KS Audi / VW Oil No. N.052.145.Z0, G.055.145.S2
B9 (A4/A5) except for TDI 260kW C8 (A6/A7) TFSI D5 (A8) V8 Q7 Q8 V6 TFSI Touareg V6 TFSI	Castrol SAF-AG4, (ZF approval number ZF001055) Audi / VW Oil No. N.052.145.00, G.052.145.A2	

(5) Fill front-axle differential and all-wheel distributor transmission with Castrol BOT851L transmission oil
=> Audi / VW / Porsche Oil No. N.052.190.D0, G.065.190.A2

(6) Fill front-axle differential and rear-axle center differential with Castrol SAF-AG4 + 4% Sturaco FM1992 KS transmission oil
=> Audi / VW Oil No. N.052.145.Z0, G.055.145.S2

(7) Only valid for service and ZF remanufactured transmissions.

Comments

Additives of any kind added **later** to the oil change the oil in a manner that is unpredictable, and they are therefore not permitted. No liability of any kind will be accepted by ZF for any damage resulting from the use of such additives.

5. Maintenance recommendations ZF automatic transmissions

3/4-speed automatic transmissions:
ZF 3 and 4-speed automatic transmissions must be filled with approved ATF oils according to ZF list of lubricants TE-ML 11, lubricant class 11A / 11B or with mineral ATF oils according to the former Specification Dexron II / Dexron III by General Motors. For oil-change intervals consult the vehicle manufacturer's specifications.

5-, 6-, 8- and 9-speed as well as 4HP20 automatic transmissions:
ZF 5-, 6-, 8- and 9-speed as well as the ZF 4HP20 automatic transmissions are filled maintenance-free with specially developed semi-synthetic ATF oils. However, due to the many factors influencing the service life of transmissions in individual operation, ZF recommends an oil change after 150,000 km for its transmissions. In operating conditions with high temperatures and loads, or with unknown vehicle use in the past, it can make sense to change the transmission oil at shorter intervals.

In each case, only released ATF oil may be used for oil changes. And oil changes must be performed in accordance with the relevant specifications. The exception is the ZF 5HP18 automatic transmission which must be filled differently depending on the version.

The released ATF oils in each case are specified in the ZF Lubricants List TE-ML 11. Please consider also the service specification of the vehicle manufacturer.

6. Lubricant classes and approved trade products

Lubricant class 11A
Automatic Transmission Fluid (ATF)

Manufacturer (11A)	Trade name (11A)	ZF approval number
ALEXANDRIA MINERAL OILS COMPANY, ALEXANDRIA/EG	AMOC POWER	ZF001702
CASTROL LTD, LONDON/GB	CASTROL TRANSMAX ATF DX II MULTIVEHICLE	ZF003358
CHEVRON LUBRICANTS, SAN RAMON, CA/US	TEXAMATIC 4291	ZF001574
ELLIS ENTERPRISES EAST D.O.O. KRUSEVAC, KRUŠEVAC/RS	ATF DII	ZF001187
ELLIS ENTERPRISES EAST D.O.O. KRUSEVAC, KRUŠEVAC/RS	VALVOLINE HEAVY DUTY ATF D-II	ZF008168
ENI SUSTAINABLE MOBILITY S.P.A., ROME/IT	ENI ROTRA ATF II D	ZF007174
EXXONMOBIL CORPORATION, HOUSTON, TX/US	MOBIL ATF 220	ZF000033
EXXONMOBIL CORPORATION, HOUSTON, TX/US	MOBIL ATF 220	ZF006029
INA MAZIVA LTD., ZAGREB/HR	INA ATF SUPER	ZF000248
KOCAK PETROL URUNLERI SAN.VE TIC.LTD.STI, KOCAELI/TR	SPEEDOL ATF DEXRON II	ZF000979
KUWAIT PETROLEUM INTERNATIONAL LUBRICANT, ANTWERP/NL	Q8 AUTO Z3D	ZF003726
LIEBHERR HYDRAULIKBAGGER GMBH, KIRCHDORF/DE	LIEBHERR HYDRAULIC-GEAR ATF	ZF002119
LIQUI MOLY GMBH, ULM/DE	LIQUI MOLY ATF DEXRON IID	ZF002052
MEGUIN GMBH & CO. KG, SAARLOUIS/DE	MEGOL HYDRAULIKOEL ATF DEXRON II D	ZF001992
MOTUL SA, AUBERVILLIERS/FR	MOTUL DEXRON II D	ZF001104
ORLEN OIL SP. Z O.O., KRAKOW/PL	HIPOL ATF II D	ZF000081
PRISTA OIL HOLDING EAD, RUSE/BG	PRISTA ATF	ZF000355
SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB	SHELL SPIRAX S2 ATF AX	ZF005982
UNIL OPAL, SAUMUR/FR	MATIC D	ZF001071
UNITED OIL COMPANY PTE LTD, SINGAPORE/SG	UNITED ATF MV 88	ZF010099

Lubricant class 11B
Automatic Transmission Fluid (ATF)

Manufacturer (11B)	Trade name (11B)	ZF approval number
CASTROL LTD, LONDON/GB	CASTROL TRANSMAX ATF Z	ZF002158
EXXONMOBIL CORPORATION, HOUSTON, TX/US	MOBIL ATF LT 71141	ZF000044
EXXONMOBIL CORPORATION, HOUSTON, TX/US	MOBIL ATF D 21065	ZF000038
FUCHS PETROLUB SE, MANNHEIM/DE	FUCHS TITAN ATF 1	ZF003602
KUWAIT PETROLEUM INTERNATIONAL LUBRICANT, ANTWERP/NL	Q8 AUTO 15	ZF002269
ZF FRIEDRICHSHAFEN AG, FRIEDRICHSHAFEN/DE	ZF LIFEGUARDFLUID 5	ZF001363